Michael, C. C.

Dr. Michael holds a technical staff position at Cigital as a Senior Research Scientist. Dr. Michael's areas of research include automated software analysis and intrusion prevention. Dr. Michael has led numerous government-funded research projects in software mutation analysis, information system intrusion detection, malicious code detection, and failure prediction.

Dr. Michael designed and implemented the mutation analysis algorithms used in Cigital's commercial product WhiteBox. He developed a simple and flexible interface language for specifying how code is mutated by WhiteBox, as well as schema-based methods for runtime mutant evaluation. Dr. Michael also developed a significant portion of the source-code processing methods in the original release of WhiteBox, as well as the parse-based fault injection system sAM, which is an extension of the system used in WhiteBox. The latter system is designed to allow arbitrary schema-based modifications of source code to be generated from abstract specifications. This system is to be used in the compile-time injection of textual faults into programs and the run-time injection of data-state and timing faults. The system has also been used to generate code that reports coverage statistics on itself.

Dr Michael received his PhD from the College of William and Mary in 1994, where he studied theoretical machine learning.

Articles

Name	Content Areas
Source Code Analysis Tools - Business Case	tools/code
Source Code Analysis Tools - Overview	tools/code
Risk-Based and Functional Security Testing	best-practices/testing
Black Box Security Testing Tools	tools/black-box